

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A virtual path configuration apparatus included in each of nodes used in a virtual private network to interconnect a plurality of user networks via virtual paths and that is arranged in each node, comprising:

a configuration information setting unit that includes an input device for inputting setting commands and information on ports accommodating user networks and nodes providing the ports, and that sets configuration information that is information about sets of the ports and the nodes configuration of the virtual private network;

a configuration information sharing unit that shares the configuration information with the other one of the virtual path configuration apparatuses included in the other one of the nodes, virtual private network by transmitting the configuration information being set by the configuration information setting unit to the other virtual path configuration apparatuses or the receiving configuration information from the other virtual path configuration apparatuses, wherein the configuration information sharing unit also includes a synchronization determination section that receives response message to confirm each entry is synchronized with each of the other nodes; and

a virtual path configuration unit that configures the virtual path paths between any combination of two of shared ports over the relay network to relay packets between user networks based on the shared configuration information.

2. (Original) The virtual path configuration apparatus according to claim 1, wherein the configuration information setting unit sets additional configuration information that is information that is to be added to the configuration information set previously,

the configuration information sharing unit transmits the additional configuration information to the other virtual path configuration apparatuses and receives additional configuration information

from the other virtual path configuration apparatuses, and

the virtual path configuration unit reconfigures the virtual path based on configuration information obtained by adding the additional configuration information to the configuration information set previously.

3. (Original) The virtual path configuration apparatus according to claim 1, wherein the configuration information setting unit sets deletion configuration information that is information that is to be deleted from the configuration information set previously,

the configuration information sharing unit transmits the deletion configuration information to the other virtual path configuration apparatuses and receives deletion configuration information from the other virtual path configuration apparatuses, and

the virtual path configuration unit reconfigures the virtual path based on configuration information obtained by deleting the deletion configuration information from the configuration information set previously.

4. (Original) The virtual path configuration apparatus according to claim 1, wherein the configuration information sharing unit monitors states of the other virtual path configuration apparatus.

5. (Original) The virtual path configuration apparatus according to claim 1, wherein the configuration information includes information about nodes to which the user networks attach, and the virtual path configuration unit configures virtual paths between the nodes in a full mesh manner.

6. (Original) The virtual path configuration apparatus according to claim 1, wherein the configuration information includes information about ports to which the user networks attach, and the virtual path configuration unit configures virtual paths between the ports in a full mesh manner.

7. (Currently Amended) A virtual path configuration method executed on a virtual path configuration apparatus included in each of nodes used in a virtual private network for interconnecting a plurality of user networks via virtual paths and that is arranged in each node, comprising:

inputting setting commands and information on ports accommodating user networks and nodes providing the ports;

setting configuration information that is information about sets of the ports and the nodes configuration of the virtual private network;

transmitting the configuration information to or receiving the configuration information from other virtual path configuration apparatuses included in other one of the nodes;

sharing the configuration information with the other one of the virtual path configuration apparatuses included in the other one of the nodes, virtual private network by transmitting the configuration information being set by the configuration information setting unit and determining synchronization by receiving response message to confirm each entry is synchronized with each of the other nodes to the other virtual path configuration apparatuses or the receiving configuration information from the other virtual path configuration apparatuses; and

configuring the virtual path paths between any combination of two of shared ports over the relay network to relay packets between user networks based on the shared configuration information.

8. (Original) The virtual path configuration method according to claim 7, wherein the setting includes setting additional configuration information that is information that is to be added to the configuration information set previously,

the sharing includes transmitting the additional configuration information to the other virtual path configuration apparatuses or receiving additional configuration information from the other virtual path configuration apparatuses, and

the configuring includes reconfiguring the virtual path based on configuration information

obtained by adding the additional configuration information to the configuration information set previously.

9. (Original) The virtual path configuration method according to claim 7, wherein the setting includes setting deletion configuration information that is information that is to be deleted from the configuration information set previously,

the sharing includes transmitting the deletion configuration information to the other virtual path configuration apparatuses or receiving deletion configuration information from the other virtual path configuration apparatuses, and

the configuring includes reconfiguring the virtual path based on configuration information obtained by deleting the deletion configuration information from the configuration information set previously.

10. (Original) The virtual path configuration method according to claim 7, wherein the sharing includes monitoring states of the other virtual path configuration apparatus.

11. (Original) The virtual path configuration method according to claim 7, wherein the configuration information includes information about nodes to which the user networks attach, and the virtual path configuration unit configures virtual paths between the nodes in a full mesh manner.

12. (Original) The virtual path configuration method according to claim 7, wherein the configuration information includes information about ports to which the user networks attach, and the virtual path configuration unit configures virtual paths between the ports in a full mesh manner.

13. (Currently Amended) A computer readable recording medium storing instructions, which when executed by a computer in a virtual path configuration apparatus included in each of nodes used in a

virtual private network for interconnecting a plurality of user networks via virtual paths and that is arranged in each node, causes the computer to perform operations, comprising:

inputting setting commands and information on ports accommodating user networks and nodes providing the ports;

setting configuration information that is information about sets of the ports and the nodes configuration of the virtual private network;

transmitting the configuration information to or receiving the configuration information from other virtual path configuration apparatuses included in other one of the nodes;

sharing the configuration information with the other one of the virtual path configuration apparatuses included in the other one of the nodes, virtual private network by transmitting the configuration information being set by the configuration information setting unit and determining synchronization by receiving response message to confirm each entry is synchronized with each of the other nodes to the other virtual path configuration apparatuses or the receiving configuration information from the other virtual path configuration apparatuses; and

configuring the virtual path paths between any combination of two of shared ports over the relay network to relay packets between user networks based on the shared configuration information.

14. (Previously Presented) The computer readable recording medium according to claim 13, wherein the setting includes setting additional configuration information that is information that is to be added to the configuration information set previously,

the sharing includes transmitting the additional configuration information to the other virtual path configuration apparatuses or receiving additional configuration information from the other virtual path configuration apparatuses, and

the configuring includes reconfiguring the virtual path based on configuration information obtained by adding the additional configuration information to the configuration information set previously.

15. (Previously Presented) The computer readable recording medium according to claim 13, wherein the setting includes setting deletion configuration information that is information that is to be deleted from the configuration information set previously,

 the sharing includes transmitting the deletion configuration information to the other virtual path configuration apparatuses or receiving deletion configuration information from the other virtual path configuration apparatuses, and

 the configuring includes reconfiguring the virtual path based on configuration information obtained by deleting the deletion configuration information from the configuration information set previously.

16. (Previously Presented) The computer readable recording medium according to claim 13, wherein the sharing includes monitoring states of the other virtual path configuration apparatus.

17. (Previously Presented) The computer readable recording medium according to claim 13, wherein the configuration information includes information about nodes to which the user networks attach, and the virtual path configuration unit configures virtual paths between the nodes in a full mesh manner.

18. (Previously Presented) The computer readable recording medium according to claim 13, wherein the configuration information includes information about ports to which the user networks attach, and the virtual path configuration unit configures virtual paths between the ports in a full mesh manner.